UNITED STATES PATENT AND TRADEMARK OFFICE

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09/780,015	02/09/2001	Bo Domstedt	1774/1G724US1	7409

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EXAMINER
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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-106* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *22 May 2001* is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All   b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date *4*.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1.   Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

2.   The application is filed on 02/09/2001 but claims the benefit of U.S. provisional

application number 60/182,356 filed on Feb. 14, 2000.

3.   Therefore, the effective filing date for the subject matter defined in the pending

claims in this application is 2/14/2000.

Claim Objections

4.   Claim 5 is objected to because of the following informalities: (a) The phrase

"farther comprising" shown on Claim 5 has spelling error. It should be corrected as

"further comprising".

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   Claims 1 – 4, 16 – 19, 37 – 40, 52 – 55, 72 – 75 and 87 – 90 are rejected under

35 U.S.C. 102(b) as being anticipated by Akiyama (Patent Number: 5440631),

hereinafter referred to as Akiyama.

6.   As per claim 1, Akiyama teaches an information processing apparatus for

converting message information from a first format into a second format, comprising:

a.   a first cipher unit having a first cipher key input and a data output for outputting a

data stream generated dependent on a first cipher key input via said first cipher key

input (Akiyama: see for example, Column 7 Line 12 – 19 and Figure 2 Element 201).

b.   a second cipher unit having a plaintext input a second cipher key input and a

ciphertext output said second cipher unit via said cipher key input being

communicatively coupled to said data output of the first cipher unit for receiving a

second cipher key in the shape of said data stream (Akiyama: see for example, Column

7 Line 20 – 41 and Figure 2 Element 202); and

c.   said first cipher unit being arranged to perform, dependent on a predetermined

rule, a renewed generation of a data stream for use as said second cipher key

(Akiyama: see for example, Column 10 Line 38 – 45).

7.   As per claim 16, Akiyama teaches An information processing apparatus for

converting message information from a first format into a second format, comprising:

a.   a first cipher unit having a first cipher key input and a data output for outputting a

data stream generated dependent on a first cipher key input via said first cipher key

input said first cipher unit comprising a memory for storage of data, means for updating

said memory with input information, an instruction table having a set of operations

arranged to modify the state of said memory, processing means arranged to select

operations from said instruction table dependent on at least parts of said input

information, and to execute said selected operations on the content of said memory

wherein at least one of said set of operations is selectable dependent on every possible

configuration of at least parts of said input information, and means for extracting output

information from said memory (Akiyama: see for example, Column 7 Line 12 – 19 and

Figure 2 Element 201),

b.   a second cipher unit having a plaintext input a second cipher key input and a

ciphertext out said second cipher unit via said second cipher key input being

communicatively coupled to said data output of the first cipher unit for receiving a

second cipher key in the shape of said data stream (Akiyama: see for example, Column

7 Line 20 – 41 and Figure 2 Element 202); and

c.   said first cipher unit being arranged to perform, dependent on a predetermined

rule, a renewed generation of a data stream for use as said second cipher key

(Akiyama: see for example, Column 10 Line 38 – 45).

8.   As per claims 37 and 72, Akiyama teaches a computer implemented information

processing method for converting message information from a first format into a second

format, comprising the steps of:

a.   a first encryption algorithm taking a first cipher key as an input and generating a

data stream dependent on said first cipher key (Akiyama: see for example, Column 7

Line 12 – 19 and Figure 2 Element 201);

b.   a second encryption algorithm taking plaintext as an input, taking a second

cipher key as an input and generating a ciphertext dependent on said plaintext and on

said second cipher key said second encryption algorithm receiving a second cipher key

in the shape of said data stream from said first encryption algorithm (Akiyama: see for

example, Column 7 Line 20 – 41 and Figure 2 Element 202); and

c.   said first encryption algorithm performing, dependent on a predetermined rule, a

renewed generation of a data stream for use as said second cipher key (Akiyama: see

for example, Column 10 Line 38 – 45).

9.   As per claims 52 and 87, Akiyama teaches a computer implemented information

processing method for converting message information from a first format into a second

format, comprising the steps of:

a.   a first encryption algorithm including the steps of establishing a set of operations

arranged for modifying the state of a memory, storing input information in a first format

in said memory, selecting operations from said set of operations dependent on at least

parts of said input information, and executing said selected operations on the content of

said memory, wherein at least one of said set of operations is selectable dependent on

every possible configuration of said input information, and extracting information from

said memory in a second format after the execution of at least one operation (Akiyama:

see for example, Column 7 Line 12 – 19 and Figure 2 Element 201);

b.   a second encryption algorithm taking plaintext as an input, taking a second

cipher key as an input and generating a ciphertext dependent on said plaintext and on

said second cipher key said second encryption algorithm receiving a second cipher key

in the shape of said data stream from said first encryption algorithm (Akiyama: see for

example, Column 7 Line 20 – 41 and Figure 2 Element 202), and

c.   said first encryption algorithm performing, dependent on a predetermined rule, a

renewed generation of a data stream for use as said second cipher key (Akiyama: see

for example, Column 10 Line 38 – 45).

10.   As per claims 2, 17, 38, 53, 73 and 88, Akiyama teaches the claimed invention as described above (see claim 1, 16, 37, 52, 72 and 87 respectively). Akiyama further teaches performing said renewed generation of a data stream for each occasion of key output (Akiyama: see for example, Column 10 Line 38 – 45).

11.   As per claims 3, 18, 39, 54, 74 and 89, Akiyama teaches the claimed invention as described above (see claim 1, 16, 37, 52, 72 and 87 respectively). Akiyama further teaches a synchronizing mechanism between the first and the second cipher unit being devised such that a renewed generation of a data stream is performed dependent on a synchronizing signal from the second cipher unit (Akiyama: see for example, Column 9 Line 10 – 17, Column 10 Line 38 – 45).

12.   As per claims 4, 19, 40, 55, 75 and 90, Akiyama teaches the claimed invention as described above (see claim 1, 16, 37, 52, 72 and 87 respectively). Akiyama further teaches a buffer for said data stream said buffer being arranged to output a data stream stored in the buffer dependent on a synchronizing signal from the second cipher unit (Akiyama: see for example, Column 9 Line20 – 29).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13.   Claims 5 – 15, 20 – 30, 41 – 51, 56 – 66, 76 – 86 and 91 – 101 are rejected

under 35 U.S.C. 103(a) as being unpatentable over Akiyama (Patent Number:

5440631), hereinafter referred to as Akiyama, in view of Bewick (Patent Number:

6072873), hereinafter referred to as Bewick.

14.   As per claims 5, 20, 41, 56, 76 and 91, Akiyama teaches the claimed invention

as described above (see claim 1, 16, 37, 52, 72 and 87 respectively). Akiyama does

not expressly teach comprising a format adaptation mechanism devised to adapt said

data stream to a format for a cipher key which is acceptable to said second cipher unit.

15.   Bewick teaches comprising a format adaptation mechanism devised to adapt

said data stream to a format for a cipher key which is acceptable to said second cipher

unit (Bewick: see for example, Column 1 Line 48 – 56).

16.   It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to combine the teaching of Bewick within the system of Akiyama

because Akiyama teaches the designs of multiple stage ciphering units for an

information distribution system and Bewick teaches detail designs to implement

pipelined stream cipher and block cipher for DVB (Digital Video Broadcasting) information distribution system.

17.   As per claims 6 – 7, 21 – 22, 42 – 43, 57 – 58, 77 – 78 and 92 – 93, Akiyama teaches the claimed invention as described above (see claim 1, 16, 37, 52, 72 and 87 respectively). Akiyama does not expressly teach the specific types of the first and second ciphering units.

18.   Bewick teaches said second cipher unit is arranged to generate a block cipher (Bewick: see for example, Figure 1 and Column 5 Line 34).

19.   It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Bewick within the system of Akiyama because Akiyama teaches the designs of multiple stage ciphering units for an information distribution system and Bewick teaches detail designs to implement pipelined stream cipher and block cipher for DVB (Digital Video Broadcasting) information distribution system.

20.   As per claims 10 – 13, 25 – 28, 46 – 49, 61 – 64, 81 – 84 and 96 – 99, Akiyama teaches the claimed invention as described above (see claim 1, 16, 37, 52, 72 and 87 respectively). Akiyama does not expressly teach the specific types of the first and second ciphering units.

21.   Bewick teaches said second cipher unit is arranged to generate either DES or AES cipher (Bewick: see for example, Figure 1 and Column 5 Line 34: Bewick teaches one of the two-stage ciphering units is the block cipher and both DES and AES are the well-known stream ciphering techniques in the field).

22.   It would have been obvious to a person of ordinary skill in the art at the time the
invention was made to combine the teaching of Bewick within the system of Akiyama
because Akiyama teaches the designs of multiple stage ciphering units for an
information distribution system and Bewick teaches detail designs to implement
pipelined stream cipher and block cipher for DVB (Digital Video Broadcasting)
information distribution system.

23.   Therefore, the modification would have been obvious because one of ordinary
skill in the art would have been motivated to modify the second cipher unit to perform
either DES or AES ciphering functions because both DES and AES are well known
block-ciphering techniques in the field.

24.   As per claims 8 – 9, 23 – 24, 44 – 45, 59 – 60, 79 – 80 and 94 – 95, Akiyama
teaches the claimed invention as described above (see claim 1, 16, 37, 52, 72 and 87
respectively). Akiyama does not expressly teach the specific types of the first and
second ciphering units and hence Akiyama does not expressly teach said second cipher
unit is arranged to generate a stream cipher.

25.   Bewick teaches said second cipher unit is arranged to generate a stream cipher
(Bewick: see for example, Figure 1 and Column 9 Line 10: Bewick teaches one of the
two-stage ciphering units is the stream cipher).

26.   It would have been obvious to a person of ordinary skill in the art at the time the
invention was made to combine the teaching of Bewick within the system of Akiyama
because (a) Akiyama teaches the designs of multiple stage ciphering units for an
information distribution system and (b) Bewick teaches detail designs to implement

pipelined stream cipher and block cipher for DVB (Digital Video Broadcasting)
information distribution system, and (c) the stream cipher can thus be evidently
allocated to the second ciphering unit.

27.   As per claims 14 – 15, 29 – 30, 50 – 51, 65 – 66, 85 – 86 and 100 – 101,
Akiyama teaches the claimed invention as described above (see claim 1, 16, 37, 52, 72
and 87 respectively). Akiyama does not expressly teach the specific types of the first
and second ciphering units.

28.   Bewick teaches said second cipher unit is arranged to perform encryption in
accordance with the requirements in GSM, for example A5/1 or A5/2 (Bewick: see for
example, Figure 1 and Column 5 Line 34: Bewick teaches one of the two-stage
ciphering units is the stream cipher and GSM A5 is a well-known stream ciphering
technique in the field).

29.   It would have been obvious to a person of ordinary skill in the art at the time the
invention was made to combine the teaching of Bewick within the system of Akiyama
because Akiyama teaches the designs of multiple stage ciphering units for an
information distribution system and Bewick teaches detail designs to implement
pipelined stream cipher and block cipher for DVB (Digital Video Broadcasting)
information distribution system.

30.   Therefore, the modification would have been obvious because one of ordinary
skill in the art would have been motivated to modify the second cipher unit to perform
GSM A5 ciphering functions because GSM A5 is a well-known stream-ciphering
technique in the field.

31.   Claims 31 – 34, 67 – 69, and 102 – 104 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Akiyama (Patent Number: 5440631), hereinafter referred to as

Akiyama, in view of Richard (Patent Number: 4004089), hereinafter referred to as

Richard and in view of Hiramoto (Patent Number: US 6657953 B1), hereinafter referred

to as Hiramoto, and evidenced by Bewick (Patent Number: 6072873), hereinafter

referred to as Bewick.

32.   As per claims 31, 67 and 102, Akiyama teaches the claimed invention as

described above (see claim 16, 52 and 87 respectively). Akiyama does not expressly

disclose the loopback (or feedback) processing method.

33.   Richard teaches the non-linear feedback circuits used for a ciphering key

generator of the ciphering unit (Richard: see for example, Column 1 Line 39 – 46).

34.   Richard does not expressly teach the feedback unit couple to a memory.

35.   Hiramoto teaches signal loopback device using a loopback memory (Hiramoto:

see for example, Column 14 Line 52).

36.   It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to combine the teaching of Richard and Hiramoto within the system

of Akiyama because (a) Akiyama teaches the designs of multiple stage ciphering units

for an information distribution system and (b) Richard teaches the non-linear loopback

methods in programmable cryptographic device for ciphering units, and (c) Hiramoto

teaches the detailed signal loopback devices by using loopback memory.

37.   Furthermore, this is further evidenced by Bewick using the loopback functions for two-stage ciphering units (Bewick: see for example, Column 4 Line 59 and Figure 4)

38.   Therefore, Akiyama as modified teaches a feedback unit coupled to said memory and arranged to combine a first processing material with a processing material obtained from a previous processing step, to feedback processing material to a program memory and to output a data stream in the shape of a completed internal key.

39.   As per claim 32, Akiyama as modified teaches the claimed invention as described above (see claim 31). Akiyama as modified further teaches the feedback unit comprises a feedback memory, possibly realized as a stack, coupled to a functional unit having a feedback to the feedback memory and to the output of the feedback unit according to a predetermined function (See same rationale addressed for claim 31 above).

40.   As per claims 33, 68 and 103, Akiyama teaches the claimed invention as described above (see claim 16, 52 and 87 respectively). Akiyama as modified further teaches the functional unit comprises a linear feedback and/or a non-linear feedback (See same rationale addressed for claim 31 above).

41.   As per claims 34, 69 and 104, Akiyama teaches the claimed invention as described above (see claim 32, 67 and 102 respectively). Akiyama as modified further teaches directing the data processing system to select, for the feedback, a function operator from a plurality of operators dependent on a predetermined rule (Akiyama: see for example, Column 10 Line 38 – 45) & (Bewick: see for example, Column 4 Line 59 and Figure 4).

42.   Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama

(Patent Number: 5440631), hereinafter referred to as Akiyama, in view of Hamann

(Patent Number: 4352097), hereinafter referred to as Hamann.

43.   As per claims 35, Akiyama teaches the claimed invention as described above

(see claim 16). Akiyama does not expressly teach the memory comprises two memory

units a cross connection unit and a second memory means having a control unit and a

memory space arranged for storing status information of the memory units where any of

the two firstly mentioned memory units is externally available and wherein it is arranged

such that the content in said second memory means is exchangeable.

44.   Hamann teaches the memory comprises two memory units a cross connection

unit and a second memory means having a control unit and a memory space arranged

for storing status information of the memory units where any of the two firstly mentioned

memory units is externally available and wherein it is arranged such that the content in

said second memory means is exchangeable (Hamann: see for example, Column 3

Line 54 – 60).

45.   It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to combine the teaching of Richard and Hamann within the system

of Akiyama because (a) Akiyama teaches the designs of multiple stage ciphering units

for an information distribution system and (b) Hamann teaches using two different

pieces of memory interchangeable to improve ciphering effect for anti-theft systems.

46.   Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akiyama

(Patent Number: 5440631), hereinafter referred to as Akiyama, in view of Hamann

(Patent Number: 4352097), hereinafter referred to as Hamann, and in view of Kneib

(Patent Number:4641238), hereinafter referred to as Kneib.

47.   As per claims 36, Akiyama teaches the claimed invention as described above

(see claim 35). Akiyama as modified does not expressly teach the cross connection

unit is arranged such that both memory parts can be called simultaneously, and such

that the memory parts are instantaneously interchangeable.

48.   Kneib teaches the cross connection unit is arranged such that both memory parts

can be called simultaneously, and such that the memory parts are instantaneously

interchangeable (Kneib: see for example, Column 7 Line 25 – 29, Column 7 Line 35 –

40 and Column 7 Line 60 – 66: Dual-port memory can be accessed simultaneously).

49.   It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to combine the teaching of Richard and Kneib within the system of

Akiyama as modified because (a) Akiyama as modified teaches the designs of multiple

stage ciphering units for an information distribution system by using two different pieces

of memory interchangeable to improve ciphering effect for anti-theft systems and (b)

Kneib teaches the method both memories can be accessed simultaneously through

dual-port memory.

50.   Claims 67 and 102 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Akiyama (Patent Number: 5440631), hereinafter referred to as Akiyama, in view of

Bewick (Patent Number: 6072873), hereinafter referred to as Bewick.

51.   As per claims 67 and 102, Akiyama teaches the claimed invention as described

above (see claim 52 and 87 respectively). Akiyama does not expressly teach

combining, in a feedback stage, a first processing material with a processing material

obtained from a previous processing step, feeding back processing material to a

program memory and outputting a data stream in the shape of a completed internal key.

52.   Bewick teaches comprising the steps of combining, in a feedback stage, a first

processing material with a processing material obtained from a previous processing

step, feeding back processing material to a program memory and outputting a data

stream in the shape of a completed internal key (Bewick: see for example, Column 4

Line 59 and Figure 4: Bewick teaches feedback functions).

53.   See same rationale of combination applies here as above in rejecting the claim 5

54.   Claims 70 and 105 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Akiyama (Patent Number: 5440631), hereinafter referred to as Akiyama, in view of

Bewick (Patent Number: 6072873), hereinafter referred to as Bewick, in view of

Hamann (Patent Number: 4352097), hereinafter referred to as Hamann.

55.   As per claims 70 and 105, Akiyama teaches the claimed invention as described

above (see claim 67 and 102 respectively). Akiyama as modified does not expressly

teach initializing said memory in the shape of two memory units, cross connecting said

memory units to the memory output and to a second memory means, storing status

information of the memory units in another memory space, wherein any of the two firstly

mentioned memory units is externally available and wherein it is arranged such that the

content in said second memory means is exchangeable.

56.   Hamann teaches initializing said memory in the shape of two memory units,

cross connecting said memory units to the memory output and to a second memory

means, storing status information of the memory units in another memory space,

wherein any of the two firstly mentioned memory units is externally available and

wherein it is arranged such that the content in said second memory means is

exchangeable (Hamann: see for example, Column 3 Line 54 – 60).

57.   It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to combine the teaching of Richard and Hamann within the system

of Akiyama because (a) Akiyama teaches the designs of multiple stage ciphering units

for an information distribution system and (b) Hamann teaches using two different

pieces of memory interchangeable to improve ciphering effect for anti-theft systems.

58.   Claims 71 and 106 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Akiyama (Patent Number: 5440631), hereinafter referred to as Akiyama, in view of

Bewick (Patent Number: 6072873), hereinafter referred to as Bewick, in view of

Hamann (Patent Number: 4352097), hereinafter referred to as Hamann and in view of Kneib (Patent Number:4641238), hereinafter referred to as Kneib.

59.   As per claims 71 and 106, Akiyama as modified teaches the claimed invention as described above (see claim 70 and 105 respectively). Akiyama as modified does not expressly teach the cross connection unit is arranged such that both memory parts can be called simultaneously, and such that the memory parts are instantaneously interchangeable.

60.   Kneib teaches the cross connection unit is arranged such that both memory parts can be called simultaneously, and such that the memory parts are instantaneously interchangeable (Kneib: see for example, Column 7 Line 25 – 29, Column 7 Line 35 – 40 and Column 7 Line 60 – 66: Dual-port memory can be accessed simultaneously).

61.   It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Richard and Kneib within the system of Akiyama as modified because (a) Akiyama as modified teaches the designs of multiple stage ciphering units for an information distribution system by using two different pieces of memory interchangeable to improve ciphering effect for anti-theft systems and (b) Kneib teaches the method both memories can be accessed simultaneously through dual-port memory.
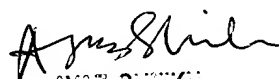
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Longbit Chai whose telephone number is 703-305-0710. The examiner can normally be reached on Monday-Friday 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R Sheikh can be reached on 703-305-9648. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Longbit Chai
Examiner
Art Unit 2131

LBC